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OF

MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor and Proprietor
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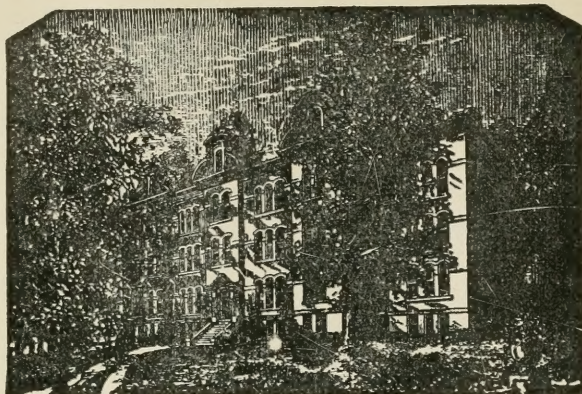
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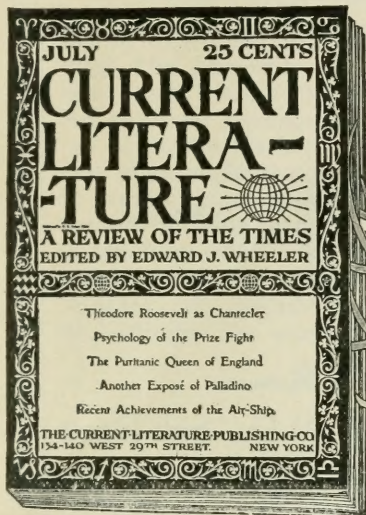
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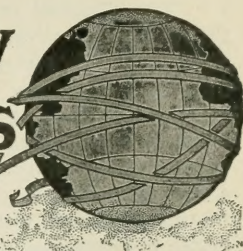
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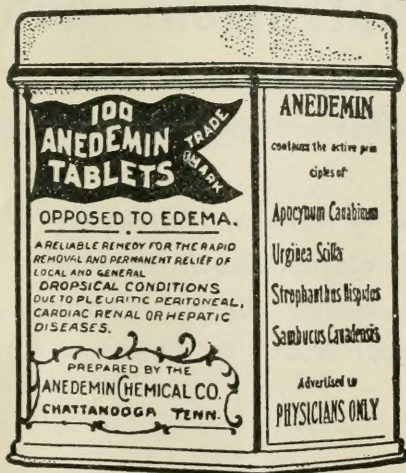
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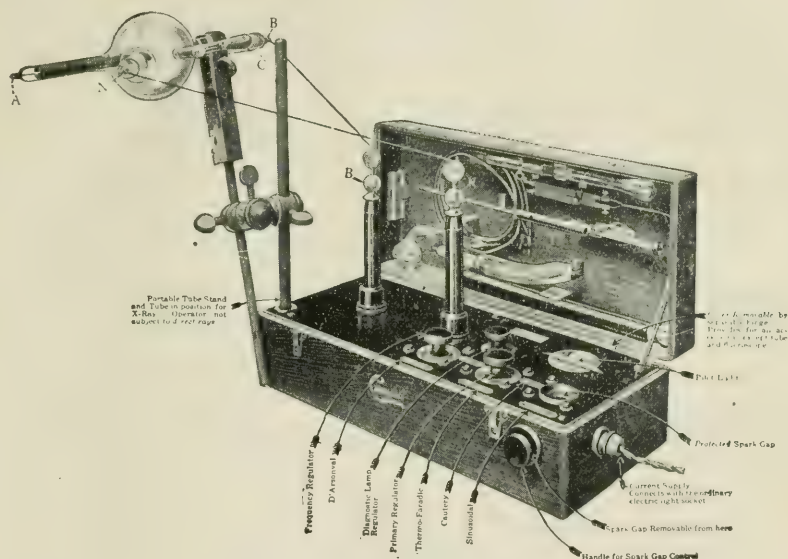
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NASHVILLE JOURNAL — OF — MEDICINE AND SURGERY

CHARLES S. BRIGGS, A. M., M. D., Editor

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Original Communications

THE ALCOHOL PROBLEM AS SEEN IN ANCIENT AND MODERN TIMES.

By T. D. CROTHERS, M.D., Hartford, Conn.

There is a historic side to the question of moderate drinking that strikingly confirms the Biblical statement that "there is nothing new under the sun."

Recent researches in the tombs and sarcophagi of Egypt and the ruins of the buried cities of Babylon show that the temperance question, and the use of wine and beer, were topics of intense interest at least seven or eight thousand years ago. Most radical laws were passed regulating the drink traffic and punishing the violators by death. Excessive use of spirits was recognized in the early Egyptian dynasties as a species of madness with degrees of irresponsibility. To take advantage of another man for a purpose was to make him intoxicated by beer and wine. These facts were well recognized. The same questions came up: How far one could drink small quantities of beer or wine and preserve his vigor and health; also whether the moderate use daily of these substances lengthened life and gave more efficiency to the labor and vigor of the person.

Laws enacted in the time of Tholemus I, somewhere about 8,000 years ago, indicated that wines had a special influence over

the spirit life; that through its influence the spirit could demonstrate itself, break away the bonds that held it, and reign for a time in the flesh. The man who drank heavily and was wild and delirious was in possession of a bad, destructive spirit which sought to break down everything that was good. When he was low and beastly in his conduct, it was some gross demon in possession, and so on through the various degrees of abnormal conduct, which indicated the good or bad spirits which had gained possession.

It was distinctly stated that it was very dangerous and destructive to allow spirits to come into the life of the present, breaking down and changing the direction and force which it should take. Hence the man who got drunk often and acted wildly and badly, was given over to the possession of demons, and his future was one of great doubt. His spirit would be crushed, and he never could come back after death to occupy his body again, but would be lost in the shades of some dark, miserable world. Men who persisted in drinking to the extent of intoxication were either made slaves or executed. They had no part in rational life.

This is an outline of the scientific view of the insanity of inebriety, and led up both consciously and unconsciously to the recognition of the physical causes and the organized, uniformed, march of disease. Then the question arose whether any use of beer or wine daily in small quantities was safe and natural, and about this there seems to have grown very great controversies, very much as at present, and the theologic reasons were prominent.

On one papyrus it is asserted that wine in small quantities daily opens the door of the under-world and gives good and bad spirits an opportunity to break down the barriers which hold men free until they are called to leave the body. The inn which men occupy, until death shall call the tenant away, is injured by wine in small quantities, and the enjoyment which comes from its use is followed by sorrow, discontent, and unrest; and the moderate wine drinker is never satisfied with his present condition, but is always looking for some other better condition, which wine seems to bring to him, and then plunges him back into dark recesses of sorrow.

On the Babylon Cuneiform Tablets are records of laws forbidding the use of wine in any form to persons engaged in public business, and asserting that no work done for the government by persons who used wine could be perfect. All builders of palaces, officers of armies, and managers of public works were required to abstain, absolutely, from all use of wine.

In another age the king in a royal decree calls attention to the causes of recent disasters as due to the use of wine by the leaders, and commands, under pain of death, that no spirits shall be taken by persons doing public work.

Various reasons were given why wines could not be used. The principle seems to have been that it made men dishonest and selfish and unfaithful to the interests of the monarch. In Egypt the reasons were theological, concerning the other world. In Babylon they were commercial, economic, and had reference to the inefficiency and losses which followed from it.

The same old question was agitated of prohibition, local option, and moderate use of spirits, and many of the laws and enactments and opinions expressed are the same as those urged today.

It is a curious fact that the injury from spirits taken in any form has been the subject of discussion through all ages, at long intervals, and many of the most modern researches were outlined long ago.

In celebrating the feast of the dead in Egypt, where each one partook of wine in which the spirit of his ancestor had entered, the question was how much could each one drink, and what quantity was safe, so that the user could carry on the observances of the sacrament without confusion. Finally, it was decided that the priests alone could drink the wine with safety, and that the worshippers, looking on, must catch something of the spirit of their ancestors and friends who had come back to enter into the fruits and drinks of the sacrament.

The same questions appear in the churches today, whether wine for sacramental purposes is safe, and the facts gathered to prove its danger have assumed great proportions. Many of the churches have substituted an unfermented drink for this purpose.

Probably that was what was done in Egypt some time in the

ages long past. Science has been testing this question of moderate drinking, and its conclusions are becoming more and more emphatic, and some of the whimsical reasons given by the ancients have been found to be shrewd intimations of actual causes, which are just now beginning to be recognized.

The theory so confidently asserted in many sections, and believed to be beyond question, that alcohol in small doses has a tonic action on the body, giving it additional strength and vigor, has no support in modern research; but, on the contrary, its so-called good effects are found to be due to its narcotic action and sleep-producing properties. The progress of science has made it possible to measure and test the power and strength which come from drugs and foods on the body, and alcohol, judged by this standard and by the modern instruments of precision, is found to be a narcotic.

Thus, for example, a man, temperate and well, is carefully measured from day to day to determine the capacity of his senses, sight, hearing, taste, smell, and touch; also his muscular power, fatigue, sense, rapidity of thought, memory, and capacity of endurance. When these capacities are determined from an average of many days' examination, a basis of comparison is formed. Then the man is given a half-ounce of spirits, usually ethylic alcohol in water, for the reason that this form of alcohol is the purest and most uniform of all spirit drinks. One hour after the use of the alcohol he is measured for the purpose of determining what effect, if any, the spirits have had on these various functions. It is found that they are all depressed and lowered, the senses are diminished in acuteness and capacity, and this can be stated in figures. Thus, the eyesight is diminished in acuteness to the extent of so many inches or feet, the hearing the same. The muscular output is lowered by so many pounds, and the fatigue point is increased, showing diminished capacity for exertion and endurance. The brain has lost its quickness and moves more slowly, and this is measurable in seconds. The power of comparing one thing with another is diminished, and the percentage of mistakes in memory tests have increased to nearly double, and so on with every function of the body. The heart's action

has been raised, but has fallen as far below the normal as it was forced above it.

These facts are all strikingly confirmed in intoxicated persons, but it is new to most persons that a small dose of spirits has precisely the same effect, only differing in degree and unobservable.

The conclusion is that alcohol is not a tonic, does not give new power and strength, is not a stimulant rousing up latent energies, and enabling one to do greater work; but that its effects are the same in all instances and under all conditions; namely, depressing and sleep-producing.

Another fact unrecognized is that the action of alcohol is cumulative; that is, the effects of continuous use gather, cumulate, and finally make themselves known in some obscure injury, either of the mind or nervous system, or by degeneration of the organs.

In Europe, gout, so-called rheumatism, heart disease, and kidney disease are the very common terminals of moderate drinkers. In this country we see apoplexy, cerebral hemorrhage, so-called strokes in which different parts of the body are paralyzed, fatal pneumonia, marked by paralysis of the nerves that lead to the lungs, or tuberculosis, called "galloping," meaning by this, sudden and rapidly fatal termination.

Heart disease includes a great variety of affections that cause a sudden stopping of the heart, either with or without any exciting cause. In reality, wearing out and stopping of the organ from age and debility.

Small doses of alcohol taken in wine or beer at the table all have the same effects, only differing in the amount of alcohol and the presence of other disturbing products. Thus, the beer-drinker, in addition to the three to eight per cent of alcohol, takes extractive matters, ferments, toxins, and substances which derange digestion and favor the growth of soil for the development of germs.

The liver is also overworked in its efforts to throw off the products of deranged food or foods that are not available to build up the body. The beer-drinker is literally blocking up the system with waste products which interfere with normal supply and

overtax the kidneys. As a result, Bright's disease and other disorders terminate fatally.

The wine-drinker at meals, besides the small amount of alcohol in the fluid, is taking acids and salts, and extractive matters that may be very dangerous and obstructive to the food supply of the body, deranging the protoplasm and the food products, and increasing the wastes, as well as diminishing the quality of the supply.

A very pronounced effect from the steady use of beer and wine, or small quantities of spirits, is the derangement of what is called the circulatory system the arteries and veins through which the blood, carrying nutrition to all parts of the body, is sent out and returned by another set of vessels. The blood is forced by the heart with a certain uniform pressure called tension. The coats of the arteries and veins keep up this tension by their power of contracting and expanding, the same as a rubber tube is able to expand with the force of water, or contract when the water is diminished. This is termed the tension, and its uniformity and regularity constitutes health and vigor. Alcohol *diminishes* this tension. The blood is thrown in greater velocity and the walls of the vessels are strained, so that they can not contract and force the current back with the same velocity, and after a time this failure produces paralysis, or inability to expand or contract according to the pressure. This is called congestion. The effect of alcohol on the heart causes it to throw a greater volume of blood with greater rapidity for the first few moments after spirits are taken, and then its power is diminished. The blood-current is weaker; both the power of driving it out and the capacity of returning it are feebler. The flushed face of drinkers from a single glass of beer or spirits shows this mechanical obstruction.

The beer and wine nose and face in persons who have used these excitants a long time show the permanency of this obstruction. This surface appearance extends to the brain and other parts of the body, and is an exact measure of the injury that comes from the moderate use of spirits.

An illustration might be used of the water supply of a city, where the water is dependent upon the pumping of an engine. Its

uniform distribution depends on the regularity of the engine and pumping. If at one time the engine is forced to the highest speed, and the water thrown with increased velocity, and at another the engine drops down to the slowest possible movement, and the water scarcely moves in the pipes of the outlying districts, a very marked derangement will follow.

The water would remain in some of the pipes, and a sediment and rust would accumulate. In others the heavy strain from the water pressure would cause fracture and breaking. This is what happens to the blood circulation of the body when the heart, under the influence of alcohol, forces double the quantity of blood through its tubes, and then drops down to the very lowest possible level. The walls of the blood vessels are seriously injured and their power of accommodating themselves to these changed conditions is permanently destroyed.

A condition grows up which may be practically called vulcanizing, or hardening of the walls, the same as that seen in a rubber pipe which loses its elasticity and becomes brittle and breaks from the slightest pressure. This change in the structure of the arteries is a disease that is very common in our present civilization, and is called apoplexy, cerebral hemorrhage, heart disease, and shocks.

The moderate drinker is almost sure to suffer at some time from these various so-called troubles. Strokes, meaning one side of the body paralyzed either suddenly or gradually, are very common, and particularly follow strains, such as running to a train, excitement, slight blows on the head and body, which are followed by death.

The moderate drinker has high-tensioned arteries, which, as measured by instruments, indicates that the arterial walls are palsied and are likely to break at any time. This tension is particularly painful and distressing in many ways, and tobacco and drugs are taken to relieve it, because they lower the strain and diminish the unpleasant symptoms.

The man who is out of breath from any little over-exertion is frequently the moderate drinker, whose heart is enfeebled and can not adapt itself to the demands.

All moderate drinkers show another symptom of damage in either red, congested, or pale, anæmic faces, and this is an **exact** representation of the blood and its circulation in other parts of the body.

We have described the mechanical obstruction, noted in the congested red faces. The white anæmic faces show that the blood has been deprived of its iron and red blood corpuscles. It is impoverished. The patient is starved, and the blood is deficient in the qualities necessary to give strength and vigour. This is the direct result of alcohol and its water-absorbing qualities. A single drop of alcohol on the back of the hand produces a sensation of coldness, which is simply the rapid water-absorbing quality of the spirits. If more alcohol is used, the coldness increases, and finally the parts become irritated and painful. Later, a direct inflammation follows from the absorption of the water, and this goes on to the extent of corroding or breaking down the tissue. This takes place when spirits are used internally. The stronger the amount of alcohol, the more it irritates and burns the mouth and throat. Spirit drinkers always drink large quantities of water to protect them from this water-absorbing property of alcohol.

This is what is called its eroding or de-hydrating quality, meaning absorption of water everywhere from cell and tissue. This destroys the nutrition of the blood, the red blood corpuscles, and not only paralyzes the blood vessels but destroys the blood itself and the principles intended to build and nourish the body. There is another fact in this connection that shows the destructive influence of alcohol on cell growth. The cells of the body resemble eggs, only they are microscopic. They contain a covering and contents of granular matter, uniformly distributed and in constant motion. When these cells, under the microscope, are brought in contact with one drop of alcohol to 100 of water, they are found to stiffen and become paralyzed for a time. When two drops are added, their activity is greatly diminished, and many of them lose all power of motion. When three or four drops are used, the death of the cell is evident from the permanent destruction of the granular amœbic bodies.

This is further confirmed by the action of alcohol on plant life. Take two plants of equal size and in the same soil. In one use pure water of uniform temperature; to the other add to the water one drop of alcohol to 100 of water. Keep this up continuously for a short time, and the difference in growth is very manifest. Increase the amount of alcohol and the plant becomes stunted and dwarfed. A still greater increase and all growth is stopped.

The water-absorbing qualities of alcohol have acted on the plant cell and checked its movements. This fact is fully confirmed in the experience of dog-breeders. The dwarfed dogs on the market are produced by stopping their growth in early life by the use of alcohol, and in that way changing the form and character of the dog. Dwarfed animals of any kind can be made by using alcohol in the food and stopping the growth. The same thing occurs in the human family.

The wine and beer given in childhood checks cellular growth, destroys protoplasm, and changes the entire physical nature of the child. Studies of heredity show this very markedly, particularly where persons have used spirits in any form continuously.

The facts are so enormous along this line and their practical confirmation is so evident in the history that it seems surprising that it is not a matter of study.

I call attention to another fact, more obscure, which scientific studies, both in the laboratory and of individual cases, point out—viz., the incapacity and physical defects seen in moderate drinkers.

First, the power of endurance is greatly diminished. No person using spirits for any length of time, in small quantities or otherwise, can endure fatigue, mental strain, muscular effort, as those who do not drink.

When put to the actual test they break down and exhibit incapacity. Two men, one a total abstainer and the other a beer-drinker, both following the same occupation, and both seeming to be in excellent health, started on a bicycle ride. The beer-drinker gave out at the end of 100 miles. The other continued to the end of the journey, some 400 miles, without any discomfort.

This can be amply confirmed by many similar experiences, in almost every department of life, and in laboratory experience is

tested with instruments of precision, showing points of fatigue in different persons, and very markedly in those who use spirits in moderation.

They are unable to exercise muscular strength, to do mental work beyond a certain narrow limit, without suffering. The capacity to add figures, to lift weights, to walk certain distances, to direct affairs, requiring attention to details, are all markedly lowered in this class of persons.

Studies of the mental capacity of moderate drinkers reveal the same early fatigue point, and the incapacity to hold the mind to a definite topic clearly. Faults of memory are apparent; failure of consecutive reasoning, absence of conservatism, crudulity, scepticism, and a great variety of fine mental shadows, and so-called weakness, mark the mental decline of persons who drink steadily.

Curiously enough, such persons are never conscious of this, and are inclined to minimize it as the failure of others to judge them properly.

Psychological examinations bring out these defects very markedly. Dickens' later stories show startling evidence of the rapid decline of his genius, in both plot and description.

The word "paralysis," as we know, means a lowering and diminution of all the powers of mind and body, but the condition is not recognized except in the later stages. Criminal records bring out this fact very clearly, and many startling defalcations and overt acts without purpose have been committed by men who used spirits steadily in such moderation as not to attract the slightest attention.

The conclusion is this: That alcohol is an anæsthetic in its action on the delicate processes of the brain and organisms, and a persistent derangement steadily carried on is sure to leave permanent defects, which may not be recognized until irreparable damage has been done. Probably the pronounced eroding action of alcohol on the cells and the circulation is in the nature of a shock which by constant repetition destroys the uniformity and perfection of the activities of the body.

The well-known illustration of a steel bar that is struck lightly with a hammer continuously for a long period, and then suddenly

ralls to pieces, is applicable here. The concussion from each blow has finally destroyed the tenacity of the fibres and they break down—not from one blow, but from the constant succession of shocks, which has prevented readjustment and restoration following the blows.

In like manner, the continuous use of spirits has lowered the repair processes and deranged the defensive forces of the body beyond the point of recovery, and thus invites disease, disintegration and death.

AUTHOR'S ABSTRACT OF AN ARTICLE ENTITLED, "A CLINICAL REPORT ON THE RELATIVE VALUE OF TURTLE TUBERCULIN IN THE TREATMENT OF TUBERCULOSIS." (From the New York Medical Journal of October 25.)

BY DR. EDWARD E. MYERS, New York, N. Y.

All the precautionary measures measures devised by science in late years for checking the advance of tuberculosis, including sanitation, out-of-door living, hygienic legislation and the like have failed to arrest the development of the disease. The annual death toll of tuberculosis reaches the awful figure of two hundred thousand in this country alone, and throughout the world this disease claims one human life every two minutes and a half.

Robert Koch's revolutionizing discovery of the tubercle bacilli has put science upon the right track and since then great progress has been made. Thanks to the research work by Prof. Piorkowski of Berlin, a specific curative and immunizing agent—his turtle tuberculin—as indicated by the collective experience of Dr. Beattie and Dr. Myers, bids fair to herald a new era in the specific treatment of consumption.

Piorkowski believes that an intravenous injection of his turtle tuberculin combines with the receptors, of Koch's side-chain theory, and forms an antitoxin similar to Jenner's vaccine for smallpox, and far superior in curative properties to that formed by injections of living human tubercle bacilli which admittedly a certain result, albeit an inadequate one.

In response to many inquiries since the appearance of the first article on Piorkowski's turtle tuberculin in the New York Medical Journal of September 13, 1913, on the "Relative Value of Turtle Tuberculin in the Treatment of Tuberculosis," the following specific results may be recorded in four of the cases treated.

Case XV.—An inspector in the Custom House Service of the United States Government, 32 years of age, diagnosticated by several competent physicians as presenting all the physical signs and symptoms of tuberculosis of the lungs, having been ill since

about September, 1909, and having fallen off from 175 lbs. to 105 lbs. and becoming too weak to hold his knife and fork in his hand, responded in less than four months to the Piorkowski turtle tuberculin treatment, increasing in weight to 159½ lbs., losing his cough, his pains in the chest and other symptoms, and repeated examinations have failed to discover a single symptom of the disease from which he had been suffering for more than three years. Repeated bacteriological examinations by the New York Board of Health have not disclosed any trace of the presence of tuberculosis. Therefore this case may be considered a specific cure.

Case XXI.—A white girl, aged 7 years, suffering from tuberculosis of the knee-joint for over two years, responded to the Piorkowski treatment in a period of less than four months, to the extent of increasing the motion of the affected joint 50 per cent. The treatment resulted in great general improvement, including the reduction of one-half inch of the swelling of the knee joint and a gain of over six lbs. in weight.

Case XVII.—A white girl, aged 19 years, suffering from tubercular glands of the neck since 1909, responded to less than four months' treatment with Piorkowski's turtle tuberculin by a gain of eight lbs., an increase of appetite and a marked improvement in general condition. Only a few glands remained with no discharging sinus, where formerly had been a large irregular mass of glands with a discharging sinus.

Case XVIV.—This case of a man aged 44 years is cited more particularly to bring out laryngeal tuberculosis than a condition of the lungs. The patient had been hoarse for some months and treatment extending to a little over one month gradually eliminated the hoarseness, signs were practically absent in the larynx and there was improvement in the cough, expectoration and color of sputum. The patient retained his weight, although the tuberculous condition was complicated with a severe form of diabetes. One month of treatment resulted in an improvement greater than that attained during the previous eight months under other forms of treatment.

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Selected Articles

THE RELATION OF ANAPHYLAXIS TO THE PROBLEM OF DISEASE.

BY RICHARD WEIL, M.D., New York City, N. Y.

Although the phenomena of anaphylaxis are in themselves among the most striking in the realm of biology, their actual importance is derived chiefly from their bearing on two subjects of great practical interest. On the one hand, anaphylaxis is destined to play a considerable role in the development of the entire subject of immunity, and this gives its data a great theoretical interest; on the other hand, it is becoming every day more apparent that an understanding of anaphylaxis is essential to the interpretation of many of the phenomena of human disease. Not only is there good reason for believing that certain diseases, for example asthma, are directly traceable to hypersensitization of the individual, but the problems of diagnosis and of therapeutics are intimately bound up with the methods of anaphylactic investigation. It is impossible to understand the immune diagnostic reactions, as, for example, the reactions to tuberculin, without an appeal to the data of anaphylaxis. Again, in therapeutics, the numerous instances of drug sensitization, but, above all, of serum disease, and of serum death, make an understanding of the underlying principles of anaphylaxis incumbent upon every physician. Indeed, it is a remarkable fact that the development of our knowledge upon this subject has been so tardy, in spite of the frequent and striking manifestations of the phenomenon in medical practice. It is over a hundred years since Jenner drew attention to those very features in secondary vaccinations, which have frequently formed the basis of von Pirquet's analysis of "allergie." Recent activity, however, has made up for the long neglect which the subject suffered. In every scientific centre of the world investigation is busy with the study of anaphylaxis, and the literature of

the subject has already assumed gigantic proportions. In this connection, it is a great source of pride to realize that the labors of American investigators has been most fruitful in the development of the subject. The work of Rosenau and Anderson, and of Gay and Southard elucidated the manifestations of anaphylaxis in the guinea pig. Vaughan was the first to propound the theory of proteid degradation, which has of late years been so actively championed in Germany. Auer and Lewis determined the essential cause of death. Schultz discovered the method of investigating the isolated tissues, a method which has been brilliantly developed by Dale, of London. Famulerer determined the mode of inheritance of sensitization. Banzhaf and Atkinson discovered the protective action of certain drugs. Wells and White have studied the sensitizing properties of chemically pure proteids. Manwaring determined the role of the liver in anaphylaxis, and introduced the method of transfusion, which Coca has since developed. The mere enumeration of these names serves to indicate, though briefly, the signal contribution which American investigators has made toward the understanding of anaphylaxis.

In a brief resume of this subject, it is, of course, self-evident that only the most salient and best established facts can be dealt with. Much is still problematical. Much has not even been touched. But regarding many important principles it is unquestionable that recent investigation has brought certainty and conviction. In the first place, it is important to gain an insight into the nature of the process which manifests itself in various guises, generally grouped together as anaphylactic symptoms. These symptoms differ materially among different species of animals. A guinea pig dies with convulsions, and with the symptoms of respiratory spasm. In the dog and the rabbit the symptoms are predominantly vaso-motor in character, while certain anaphylactic phenomena, presented by man, such as the urticarias and the arthropathies, have hardly an analogy among the inferior species. And yet, there is no doubt, in spite of these differences, that the underlying basis of the process is the same throughout. The essential factor in every case of anaphylaxis is always the union of antigen and of antibody. If a foreign proteid is introduced into

the body of an animal by any route except the natural route of ingestion by the mouth, whether subcutaneously, intraperitoneally or intravenously, the animal body always responds by the production of specific antibodies to that foreign proteid. This reaction consumes a certain period of time. After that interval a second introduction of the same proteid, again by an artificial route, results in a union of the newly-formed antibody with this proteid (the so-called antigen), which, under certain conditions, is explosive in character, producing the symptoms of anaphylaxis. The role which is played by the complement in this union has not been definitely ascertained, and at the present time it is impossible to state with certainty whether or not the complement is an essential factor in the result.

The second important question concerns the site of the reaction. In other words, the tissue in which the union of antibody and antigen must occur in order to produce anaphylactic symptoms. This introduces a problem which has vexed the literature of this subject for many years. It is conceivable that this union occurs in the circulating blood, a belief which I have called the "humoral" theory of anaphylaxis. Again, it is possible that the reaction occurs within the cells of the body, and this has been called the "cellular" theory. The decision between these two theories is not merely of scholastic interest, but is of fundamental importance in the interpretation of practically all the phenomena of anaphylaxis. For the last few years the activities of Friedberger, in Berlin, in fact, of almost the entire German school, have been directed toward the defense of humoral theory, and yet, as I believe certain evidence recently adduced gives almost conclusive confirmation of the cellular view. This evidence is both serological and physiological in character. With serological methods it is possible to show that the presence of antigen and of antibody simultaneously in the serum, never of itself gives rise, in any possible combination, to anaphylactic symptoms. In the second place, if antibody from another animal is introduced into a normal guinea pig, it is only after a lapse of several hours, during which time this antibody can be demonstrated to disappear from the blood, that anaphylactic shock can be induced. Presumably, dur-

ing this latent interval the antibodies become anchored to the cells, and not until this has occurred does the animal become hypersensitive. Finally, by physiological methods it has been shown that an isolated, muscular organ (such as the uterus), taken from a sensitized animal, still manifests a typical specific, anaphylactic reaction, even though every possible trace of serum has been washed out. The conclusion seems inevitable that the reaction occurs within the cells.

The cellular theory of anaphylaxis is of importance in clinical medicine in so far as it explains certain interesting phenomena of disease. It is well known that certain individuals have an idiosyncrasy towards food stuffs, of so pronounced a nature that the very introduction of these substances upon the tongue, or even, as in some recorded instances, upon the skin, produces a striking localized reaction. It seems necessary to conclude, at least in the light of our present knowledge, that the cells of the skin or of the mucous membrane are sensitized towards these foreign proteids by virtue of the possession of specific antibodies. The union of the two produces a characteristic explosive local response.

What may be the nature of the reaction between antigen and antibody, which is of such a character as to produce the symptoms of anaphylaxis, is still unknown. Vaughan and, following him, the German school, have adduced a great deal of very convincing evidence that the union of these two substances results in the production of toxic proteoses. On the other hand, Auer and Lewis have failed to demonstrate any such products in the lungs of guinea pigs killed by anaphylaxis. At all events, we may be sure of one essential fact, namely, that this interaction results in the stimulation of certain characteristic cellular activities, resulting in the production of such varied manifestations as bronchial spasm, vaso-motor paralysis, intestinal inflammations, urticaria, generalized convulsions, a striking drop of temperature, and others too numerous to mention.

These essential features of the phenomena being determined, it remains to inquire into certain important details, and first among these comes the question of the sensitizing dose. To put this problem in the shape of a question—what dose of a foreign proteid,

upon a first introduction, will render an animal hypersensitive to that proteid? This question introduced us at once, not only to the problem of the relationship of anaphylaxis to immunity, but also to one of the most important problems of human disease. It was, until very recently, customary to maintain that not only very minute doses of a foreign proteid were effectual in producing the anaphylactic state. In fact, one of the most remarkable aspects of the entire subject is the fact that excessively minute doses, such as 0.001 cc. of horse serum or 0.000001 gms. of purified egg albumin is sufficient to render an animal hypersensitive. On the other hand, it had been quite generally taught that the use of larger doses of foreign proteid induced, not anaphylaxis, but immunity, a condition which is the reverse of anaphylaxis, in so far as the animal manifests a heightened resistance to the toxicity of a foreign proteid. We may now regard it, however, as fairly well established that large doses of foreign proteid sensitizes an animal, if we may judge from the results obtained in guinea pigs, in exactly the same fashion as do minute doses. Guinea pigs which have received subcutaneous injections of 2 or 3 cubic centimeters of horse serum on each of three successive days may be killed after an interval of ten days by an injection of horse serum which is less than one-tenth of the toxic dose for the normal animal. This result follows not occasionally, but regularly, and with certainty. It is apparent that this statement is entirely opposed to the findings of the earlier investigators. As recently as 1911, Besredka stated that the introduction of doses of horse serum in amounts larger than one-fiftieth (0.02) of a cubic centimeter resulted generally in the production, not of anaphylaxis, but of immunity. The difference in conclusions is due simply to a difference in the method of experimentation. In former years, it was customary to make the second, or so-called "toxic" injection, either by the intraperitoneal or by the intracerebral route. The recent results have been obtained by means of intravenous injections. It is evident, from what has been said, that in one particular at least the processes known as immunization and as hypersensitization are alike, in so far as it can be shown that the animal is hypersensitive in exactly the same fashion after the one as after the other.

And this is equivalent to the statement that every immune animal is potentially anaphylactic.

And, yet, there is undeniably a striking element of difference between immunity and anaphylaxis. An animal sensitized by a minimal dose of horse serum, may be killed by one one-hundredth (0.01) of a cubic centimeter of horse serum, given intravenously. An immune animal presents no symptoms upon such an injection, but may be killed by five-tenths (0.5) of a cubic centimeter. A sensitized animal may be killed by one-half cubic centimeter, given intraperitoneally, but a highly immunized animal often presents no symptoms upon the intraperitoneal introduction of doses which represent the limit permitted by the experiment—such as 6 or 8 cubic centimeters. This difference, although apparently simply quantitative, actually represents a fundamentally different mode of reaction to the antigen in the two types of animal. The immune animal possesses a considerable amount of free circulating antibody, in addition to a relatively enormous amount of loosely fixed, quickly mobilized antibody. The sensitized animal, however, has extremely small amounts of free antibody in the blood. Therefore, in the sensitized animal the sensitized cells are left naked to the attack of the antigen, whereas, in the immunized animal the antigen is effectively bound before it can reach the cell. This interpretation, which seems necessary in the light of recent facts, is fundamentally different from that of the humoral school. According to the humoral school, every reaction between antigen and antibody occurs within the circulating blood. If the amount of antibody available is small, as in the sensitized animal, the destruction of the introduced antigen is incomplete, resulting in the production of toxic proteoses. In the immunized animal the antibody is present in amounts sufficient to break down the antigen rapidly into non-toxic end-products. Thus, according to the cellular theory, the process productive of anaphylactic symptoms is essentially different from that of immunity, whereas, according to the humoral theory, the two processes are identical, differing only in degree.

The relationship of these data to the problem of human medicine is not far to seek. It had long been known that individuals

who had received a previous dose of diphtheria antitoxin, were likely to respond with more or less severe symptoms upon a second introduction, after an interval. But the fact that diphtheria antitoxin is usually administered hypodermically, is sufficient practically to insure absolute safety from anaphylactic death. An altogether different condition confronts the medical profession, in connection with the use of antimeningococcus serum. In meningitis it is customary to inject very large quantities of serum, often 20 or 30 cubic centimeters, intra-spinally, in some cases repeatedly. Such human individuals, according to the common interpretation of the facts, should be immunized against this serum. On the other hand, if the analogy of the guinea pig experiments is applicable, such individuals should be hypersensitive to this serum, if given intravenously. Now, the administration of large amounts of serum intra-spinally, especially where the meninges are inflamed, is essentially similar to an intravenous injection, owing to the fact that absorption is excessively rapid. It follows, therefore, that such individuals should by analogy prove hypersensitive upon the renewed administration of serum after an interval of days. As an actual fact, the recorded cases demonstrate that human beings react in this respect, exactly as do the guinea pigs. Hutinel has recorded four cases of meningitis, in each of which the patient had received several large intraspinal injections of serum. After an interval of a varying number of days, a renewal of the symptoms prompted the use of another intraspinal injection. This resulted in a violent explosion of characteristic symptoms and death. Hutinel rightly attributes this series of disasters to anaphylaxis. No less an authority than Netter cites two additional cases, and other cases may be found in the literature. It is, therefore, at once apparent that the use of serum in meningitis, under conditions such as those described above, is always associated with the very material danger of anaphylactic death. The use of large doses of therapeutic sera, intravenously, it seems hardly necessary to add, is associated with exactly the same dangers, perhaps in higher degree.

Passing over other features of anaphylaxis, which have a less important practical bearing, we come now to the problem of de-

sensitization. It has long been known that a sensitized animal, which has received a second dose of antigen, not large enough to produce death, but still fairly large, is thereby rendered refractory to further injections of the antigen, and that this refractory period persists often for weeks. Besredka suggested that this fact might be utilized to avert the danger of a threatened anaphylactic shock. He advocated that all patients upon whom a therapeutic injection of serum was to be practiced should be given either one smaller dose or a series of graded doses of the serum by way of preliminary, in order to protect them from the subsequent large injection. He demonstrated very convincingly upon sensitized guinea pigs the complete effectiveness of this method. Unfortunately, however, Besredka sensitized all his guinea pigs with minute doses of serum. If he had employed massive doses, as in the experiment previously described in this paper, he would have found results which largely interfere with the practical effectiveness of his method. Thus, a guinea pig which had been sensitized by means of several massive doses, can not be desensitized by a preliminary injection of serum, which may be even four times as great in amount as the lethal dose for guinea pigs sensitized by means of a small dose. In order to know, therefore, what dose is necessary for the purpose of desensitizing a guinea pig, one would have to know in advance by what dose the guinea pig had been sensitized. Such data are, of course, absolutely unobtainable in human cases. Consequently, the method of desensitization is subject to very great errors. A case very much in point has recently been recorded by two French observers—Grysez and Dupuich. In this case antimeningococcus serum had been given in considerable quantities. Three weeks after the arrest of the symptoms, they recurred, suggesting a repetition of the intraspinal injection. For the purpose of avoiding shock, the authors gave a preliminary intraspinal dose of 2 cubic centimeters of serum. Nevertheless, the subsequent injection produced severe symptoms of an anaphylactic character, in which death appears to have been narrowly averted. Therefore, it seems wise to urge that in such instances, the patients should be prepared for a subsequent intraspinal injection by the previous use of relatively very large doses

of serum, given subcutaneously. But, even with this precaution, the avoidance of anaphylactic shock is not insured. In this connection, it may not be amiss to mention that Auer has counselled the use of atropine in large doses.

Finally, among other aspects of the subject which present themselves, there is but one regarding which I wish to speak in detail, and this is the subject of antisensitization. A guinea pig may be passively sensitized by giving it an injection of the serum of a rabbit, which has been immunized against horse serum. A subsequent injection of horse serum, if made after the lapse of a few hours, kills such a guinea pig exactly as if it had been sensitized by a preliminary injection of horse serum. If, however, such a guinea pig receives an injection of normal rabbit serum a week or so before the immune rabbit serum is administered, this animal fails to be sensitized, and presents practically no symptoms upon the injection of horse serum. This phenomenon I have described as "antisensitization." It is explained upon the theory that the first injection of normal rabbit serum stimulates the production of antibodies, which then destroy the rabbit antibodies, introduced at the time of passive sensitization. Interesting as is this phenomenon from a theoretical standpoint, it has an additional practical bearing. It would lead by analogy to the belief that therapeutic antisera would materially lose in effectiveness when employed, even over brief periods of time, in human beings. The human organisms would rapidly produce antibodies after the first injection which would then destroy the antibodies on subsequent introductions of the same serum. Not to go into a long theoretical discussion, it would be fair to assume from the test-tube experiments upon anti-antibodies that antitoxic sera, such as diphtheria or tetanus antitoxin, would be largely excluded from this generalization. On the other hand, lytic sera, such as the anti-meningococcus serum or the pneumococcus serum, might reasonably be expected to fall within this domain. It is, perhaps, for this reason among others, that the local use of anti-meningococcus serum, upon which Flexner has laid so much stress, is so much more effective. The neutralization of the introduced anti-bodies would occur chiefly in the blood. In the spinal canal, however, the

effectiveness of the serum is not seriously impaired by the presence of anti-bodies, even in an individual who has received many large doses.

The subject of anaphylaxis is so large, and its affiliations so widespread, that it is impossible at the present time to do more than indicate the essential and important features of the phenomenon. In a brief paper one is only too conscious of the inadequacies entailed by the necessities of time and space. It is possible that the present tendency to seek an explanation in anaphylaxis for a large number of the obscure phenomenon of disease is somewhat hasty. On the other hand, it seems likely that further study will lay bare many hitherto unsuspected relationships. At all events, we may feel certain that the understanding of the problem has by no means reached finality, and that many puzzling and obscure features—both of immunity and practical medicine—will be clarified by future research in this field. Moreover, it is surely not extravagant to hope that the anaphylactic perils which are at present associated with the use of therapeutic sera will eventually be removed by methods devised through laboratory research.—*The Louisville Monthly Journal of Medicine and Surgery.*

Extracts from Home and Foreign Journals.

SURGICAL

CHOLECYSTITIS.

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J. O'Connor, writing in *The Lancet*, believes that nothing short of cholecystectomy effects a permanent cure in the great majority of cases commonly known as attacks of gallstones. He has formed a plan of attack which has resulted in rendering removal of the gall-bladder a very simple ten minutes' performance. Making use of the Robson position, and a free vertical semilunar incision:

(1) The liver is drawn forward and upward, a superficial incision is made with a knife along the line of attachment (generally adhesion) of the gall-bladder to the under surface of the liver; with the handle of the knife a space is rapidly made for insertion of the left index finger, and in a few moments the gall-bladder is freely detached from its hepatic connection—separation is carried right down to the level of the cystic duct. In order to control oozing a gauze pad is placed in the fossa fellea.

(2) Having next carefully isolated the whole operative field, the gall-bladder is aspirated, then seized and incised between two of Lane's forceps, the interior mopped dry, and calculi removed. The gall-bladder is then vertically split down to the level of the cystic duct by a few strokes of the knife, the tip of the left index finger is inserted into the cystic orifice, and the divided gall-bladder, with forceps attached to cut edges, is gathered up firmly, in one grip, in the left hand, and pulled forward. The manoeuver renders the operation practically a bloodless one, and greatly facilitates subsequent separation of deep adhesions and examination of ducts.

(3) The cystic and common ducts are then carefully palpated with the right hand, and the tip of the left index finger removed from the opening of the former for passage of a small sound. If no calculi are discovered, the tip of the finger is replaced, and the

assistant applies a strong catgut ligature, just below it, around the cystic duct. This ligature generally occludes the cystic artery. The two flaps of the gall-bladder are then cut away by a few transverse snips of a scissors, about half an inch in front of the ligature. When it is considered expedient to drain the bile-ducts no ligature is applied; the cystic artery and other bleeding points are ligated, and the edges of the cystic duct sutured to the upper angle (peritoneum) of the wound, and a small drainage tube fixed in the duct. Before closing the parietal wound by three or four through-and-through strong silk sutures, the author usually inserts a large drainage tube, which is left *in situ* (fossa fellea) for two or three days.—*The Medical Brief*.

THE TREATMENT OF SURGICAL TUBERCULOSIS WITH ARTIFICIAL LIGHT.

Dr. R. Hagemann (Deut. med. Wochensch.) reports successful results from the clinic of Professor Koenig with the quartz lamp of Nach-Nagelschmidt in 31 cases, comprising lupus, superficial tuberculosis processes, fistulas, glandular enlargement, etc. On the other hand, tuberculosis processes of the bones and joints were not improved to any extent and hence the quartz lamp does not serve as a complete substitute for sunlight. This is probably attributable to the fact that its effect is localized, while in heliotherapy the entire body is subjected to the influence of the light, the general circulation and metabolism being favorably influenced. As there has recently been some doubt as to whether the ultra-violet rays of sunlight are the sole therapeutic factor, the author set himself the task to determine whether other rays might not contribute to their action, and found that if the red rays were used in conjunction with the ultra-violet the effect was not only more marked, but more agreeable. Application of artificial light were always made in the open air, thus being supplemented by this valuable agent. This combined procedure was resorted to in 52 cases with speedy improvement of the patient's condition, as shown by a increase of appetite, better sleep, rapid subsidence of

pain, and considerable gain in weight. The local symptoms, however were slower in disappearing. When raw surfaces and fistulas were present, the discharge was at first increased and then gradually diminished until healing resulted. The mobility of tuberculosis joints was improved and the exudates absorbed, while cold abscesses disappeared. Sometimes it was found beneficial to combine this treatment with the customary surgical measures, such as puncture, injections of iodo-glycerine, curettage, and resections.—*Medical Fortnightly*.

BONE TRANSPLANTATION.

Chiari has transplanted small pieces of bone marrow into the spleen of a rabbit. The bone marrow retained its vitality and was found to have increased materially in size when the animal was killed five months later.

DeQuervain has treated two cases of total dislocation of the cervical vertebræ by a bone transplant, using a technic much like that of Albee in cases of tuberculosis of the spine, except that he took his grafts from the spine of the scapula.

McWilliams, being confronted with the problem of obtaining a bone transplant to fill the gap by the removal of the inferior maxilla, excised the curve of the seventh rib superiosteally and successfully inserted this bone. He obtained an excellent cosmetic result.

Jokoy has been studying the effect of periosteum emulsion as an aid to bone production. His experiments have been carried out in rabbits and dogs. His conclusions are: (1) That autoplasmic implantations of an emulsion of small pieces of periosteum causes new formation of bone tissue in most experiments. (2) That mechanical conditions play a great role. Thus his negative cases were those in which the periosteum was shrunk or rolled up. (3) In one case, examined seventy days after the injection, there were no signs of resorption of the formed bone, but rather a tendency to further growth. (4) The homoplastic cases were positive, but did not show such a marked formation of new bone as

the autoplasmic. (5) The heteroplasmic cases did not show any formation of new bone. (6) Fresh blood injected with the periosteum did not seem to have any favorable influence on the formation of new bone. (7) Fibrin favors the formation of new bone. (8) Any small pieces of bone by chance injected with the periosteum will be absorbed.—*The American Practitioner*.

SPLENECTOMY FOR PERNICIOUS ANEMIA.

The claim that splenectomy has cured cases of true pernicious anemia will naturally be regarded as quite ill-founded and based on an error of diagnosis. Only when the anemia is due directly to a diseased spleen, as in Banti's disease, would it appear rational to remove the latter, and the clinical results entirely bear out the theory. Nevertheless it appears that about last June Unger removed a spleen from a patient who presented an increased hemolysis *in vitro*. Mosse also removed a diseased spleen from a woman whom he believed to have pernicious anemia. Hardly anyone would agree at first with his diagnosis on account of the robust appearance of the patient after her operation. Before the latter her red cell count was but 1,100,000; now it is more than 4,000,000. At the October meeting of the Berlin Medical Society (*Berliner klin. Wochenschrift*, November 3) Huber read a paper on the influence of splenectomy on pernicious anemia which will appear soon in full in the same journal. He also presented the patient. In discussion it was shown that an Italian, Antonelli, had done splenectomy, for pernicious anemia at Baccelli's clinic. Huber denied that there is any contraindication to the operation in the presence of the pernicious blood state. Leucemia is the sole contraindication.—*Medical Record*.

HAIR-BALL REMOVED FROM STOMACH OF A CHILD.

An unusual case of gastric disturbance is illustrated by a case reported by S. Barling (*Proc. Roy. Soc. Med.*). A girl seven years of age was admitted for vomiting and severe pain in the

upper abdomen of two days' duration. Since an attack of dysentery four and a half years before she had been in the habit of chewing up pieces of string, tape, etc., and occasionally fragments of such things had been found in the motion. Her appetite was good up to ten days before the time she was taken ill, food being taken in normal quantity and without discomfort. On examination, a hard lump resembling the outline of the stomach could be felt descending from beneath the left costal arch, and passing transversely across the epigastrium. The outline of the tumor together with the history led to a correct diagnosis. The specimen was easily removed through a longitudinal incision into the anterior wall of the stomach about 3 inches long. The opening in the stomach was closed by a double layer of sutures, and the child made an uneventful recovery. The specimen consisted of a mass of hair and string, the former predominating; it presented an exact cast of the stomach. — *The Charlotte Medical Journal*.

MEDICAL

CALCIUM CHLORIDE.

It was shown through experiments by Hammarsten, Ringer and others, some years since, that the coagulability of the blood depends upon the presence in that fluid of calcium. The chloride salt was used in a variety of conditions, with the result that its almost universal adoption was brought about as an efficient hemostatic in all cases where hemorrhage was anticipated or in actual evidence by clinicians in Europe and America. Reports collected from medical literature show its curative effects in hemophilia, purpura hemoptysis, epistaxis, gastrointestinal hemorrhage, aneurisms, menorrhagia, postpartum hemorrhage and in teeth extraction, as well as general surgery before operations. It acts as an aid in the cicatrization of tubercular ulcerations, in chorea and colliquative diarrhea of children, and as a curative agent in eczema

and lupus, chilblains and ulcers; in glandular enlargements, urticaria, tonic and in promoting the secretion of milk in nursing mothers.—*The American Practitioner*.

PNEUMONIA AND CARDIAC LESIONS.

Keller states that in pneumonia, even so slight a lesion as a lateral arteriosclerosis may be sufficient to render the heart the *locus minorac resistentiae*. During the pneumonia the arteriosclerosis may become apparent, perhaps as a stenosis and insufficiency of the aortic valves. The author no doubt refers to this complication as it occurs in young and middle-aged people, since in the old the association must be extremely common. A subject who has never experienced any illness is stricken at an advanced age with pneumonia. If some evidence of arteriosclerosis did not crop out during repeated examinations, one would be surprised. The author's patient was a man of 36, in apparently perfect health. He passed through a typical pneumonia, the heart behaving throughout in a normal manner, until about four weeks after the onset of the disease, when he complained of dyspnea. Heart boundaries were normal but a systolic murmur was everywhere present. Later the noises became loudest about the aortic valves. Recovery occurred to some extent, the patient being able to go about as usual, but the state of the valves showed no change. The author had made a diagnosis of endocarditis following pneumonia but the picture and history showed that the heart lesion must have been atypical. An x-ray showed a heart of normal size and site. There was no evidence of arteriosclerosis, and as a high degrees of anæmia was present it was believed that this formed a link between the pneumonia and cardiac lesion. Some months later a second examination showed that the anæmia had disappeared while the symptoms pointed entire to arteriosclerosis. There could be no doubt that an early arteriosclerosis or presclerosis had been intensified by the pneumonia.—*Medical Record*.

"WEEDS" TO EAT.

During these days when the cost of foods are gradually increasing, any attempt to secure new and cheaper commodities is welcome. In the *Gardener's Chronicle* of America, March, 1913, Mary Tabott calls attention to the value of many of our common weeds as vegetables and salads. The common dandelion, the milk-weed, yellow dock, red clover, poke shoot, sour grass and golden thistle, bring to mind visions of the countryside, the fields, the woods and the waste places. They are known to the many as foods for cattle and for goats, though a few nationalities that have been transported to this country make use of some of them as foodstuffs.

The idea of cultivating weeds regularly as a crop is not unreasonable if the general public can be brought to realize and appreciate their food value. The value of the mineral elements contained in these common plants differs but little from that obtainable from most of the vegetables cultivated at present. As sources of nitrogen, some are of greater service than the salads now in common use.

The medical qualities of the dandelion, yarrow, marsh marigold and similar wild plants is well established in folklore. The growth of new foods in popular favor is slow. It required twenty-five years to establish a good dietetic reputation for the "love apple," as the tomato was termed. Mushrooms were long forsworn as inedible and poisonous.

In the search for new food material, it appears to be rational to look about us, to consider the familiar plants which almost daily present themselves to view. The pastures, the meadows, the forests and the fields may yield many plants now merely admired for their beauty, their odor or their decorative value, which may perchance be valuable additions to our daily economy. The cultivation of foodstuffs of high caloric value and with low cost deserves encouragement. In the struggle for life and sustenance, we must not underestimate the life-preserving qualities and the dietetic value of the common "weeds" that are so abundant where least desired.

Nourishment is not to be refused, though it comes from the roots of the thistle, the shoots of hops, the purslane or the tuberous roots of broad leaved arrow. The soy bean is barely known, save as a forage crop or as an antidiabetic food. Alfalfa promises to assume a place of importance. Weed cultivation will lead to a wider variation in dietaries. The monotony of the daily meals may be changed while the cost may be reduced. The palate will receive greater pleasure and the pocketbook will suffer less distress. The chemist, physiologist, dietician, economist and physician may be able to coöperate in opening up new fields of available food that will serve to add to human welfare, comfort and efficiency.—*Medical Review of Reviews*.

TREATMENT OF TUBERCULOSIS IN THE CHILD BY THE
METHOD OF FERRIER.

Galliot (Arch. de med des enf.) gives his results in children unable to leave the poorer quarters of Paris for the country, when treated by the remineralization of Ferrier. The children treated were in the first and second stages of pulmonary tuberculosis, or had tracheobronchial adenopathies. The remineralization is accomplished by the administration of a mixture of carbonate and phosphate of lime, chloride of calcium, calcined magnesia, and arrhenal, given in powders proportionate to their age, three times daily for months. He also gave cod liver oil because in its composition it has lecithin, and organic phosphorus, iodine, and bromine assisting in remineralization. The little patients treated by this method all were benefited by it. Two typical histories are given in detail. The Dr. finds that the pulmonary lesion was benefited by the treatment, although cicatrization has not yet been obtained and there must be some reserve as to the ultimate results still there has been a complete arrest of the development of the disease. The general condition has much improved, the loss of flesh and cachexia have ceased; weight has increased and growth has gone on regularly. He recommends this method of treatment which is applicable among the poor who can not go to the country or undertake expensive treatment.—*The Charlotte Medical Journal*.

OBSTETRICAL

AFTER RESULTS OF OPERATION FOR UTERINE DISPLACEMENTS.

Giles (Proc. Roy. Soc. Med.) finds that the general or local health of patients has been improved in 90 per cent of cases, the position of the uterus has remained good in 96 to 98 per cent; there have been records of sixty-two full-time confinements, with no complications that could be attributed to the operation, and including forty-seven natural labors; the uterus has kept in good position after labor in 97 per cent; and the patients have been free of bladder disturbance or had no more than before operation in 85 per cent of cases, 20 per cent having actually improved. Hysteropexy is, therefore, a valuable procedure in cases of retroversion, prolapse, and procidentia, inasmuch as it is simple, safe, permanent in its effects, and not harmful in the event of subsequent pregnancy.—*The Charlotte Medical Journal*.

FLOATING SPLEEN AND ITS RELATION TO OBSTETRICS

Dr. F. Montuoro states that floating spleen appears to be a disease peculiar to the feminine sex, as shown by the overwhelming majority of the observed cases. The reason for this has not been satisfactorily explained. Enlargement of the organ alone will not account for it, for while malarial splenic tumors are more frequent in males than in females, prolapse of such a spleen is never found in them. According to a number of authors the spleen becomes congested and enlarged during pregnancy, and this may have some bearing upon the etiology. In general, the factors concerned in the causation of floating spleen comprise enlargements of the organ, changes in the peritoneal folds, reduction of abdominal pressure, relaxation of the abdominal walls, etc., in connection with a traumatic factor or vomiting. While any of these conditions may be present in pregnancy, they do not suffice for an

explanation, since otherwise floating spleen would be much more frequent during this period than at other times. Even the changes in the thoracic and abdominal organs caused by the wearing of a corset can not be considered of etiological significance, because the majority of splenectomies have been performed in peasant women who do not wear corsets. Floating spleen has been observed in all regions of the abdomen and may contract adhesions with any of the abdominal or pelvic organs. Its presence only becomes serious when a twisting of the pedicle takes place because of the severe resulting changes in the splenic structures as well as the inflammatory reaction in the peritoneum and neighboring viscera. If pregnancy occurs in a subject of floating spleen the organ may be compressed between the uterus and pelvis or its pedicle may become twisted, requiring resort to splenectomy. Fortunately, this operation gives a favorable prognosis both as regards the mother and the continuation of the pregnancy. Floating spleen is rarely correctly diagnosed, the tumor being very likely confounded with inflammatory swellings or neoplasms.—*International Journal of Surgery*.

LOCAL ANESTHESIA IN MINOR GYNECOLOGY.

S. J. Wolfermann, of St. Louis (*Jour. Mo. State Med. Assn.*, May, 1913), is a believer in the use of local anesthetics for anesthesia in cleansing the infected uterus. He has been in the habit of using cocain in $\frac{1}{2}$ per cent solution for this purpose, but he quotes the history of one case in which the patient had every symptom of cocain poisoning, and he remarks that the possibility of an idiosyncrasy for cocain and the well-known toxicity of this drug make it advisable in the future to reduce the concentration of the solution used, or to substitute for it a less dangerous drug such as novocain, etc. In addition to incomplete abortion, local anesthesia opens a most promising field in minor operations on the cervix and body of the non-pregnant uterus. We believe local anesthesia will eventually become the sovereign method in minor gynecology, and in such cases do away with the well-known dangers and discomforts of general narcosis.—*The Lancet-Clinic*.

Editorial

PUBLISHER'S NOTICE—The Journal is published in monthly numbers of 48 pages at \$1.00 a year, to be always paid in advance.

All bills for advertisements to be paid quarterly, after the first insertion of the quarter.

Business communications, remittances by mail, either by money order, draft, or registered letter, should be addressed to the Business manager, C. S. Briggs, M. D. corner Sumner and Union Streets, Nashville, Tenn.

All communications for the Journal, books for review, exchanges, etc., should be addressed to the Editor.

THE RUNNING EXPENSES OF A CITY DOCTOR.

In view of the Income Tax it seems apropos to make a rough estimate of the running expenses of an average city doctor. Such an estimate as we are going to make refers especially to cities in the South where the great majority of doctors have an office establishment which is separate and distinct from the home. The automobile expenses we consider a *sine qua non* in any city of 75,000 inhabitants or more, except in the very large cities like Chicago, New York, Buffalo and others where the transportation facilities are such that nearly any home can be reached by some of the numerous methods of public transport:

Automobile upkeep -----	\$300 00
Telephone -----	60 00
Office girl -----	144 00
Office Rent -----	240 00
County and State Society, including journal--	7 00
American Medical Ass'n, including journal---	5 00
One good journal-----	5 00
Physician's Liability Insurance-----	20 00
Books -----	30 00
Medicines and Reagents for office-----	10 00
Dressings and new instruments-----	25 00
	<hr/>
	\$846 00

As these figures are all rather low, especially those for the automobile and office rent, we are safe in counting the actual running expenses incident to business, \$1,000.00. So we see that, contrary to the layman's ideas, everything the doctors collect is not net profit by any means. Of course it is unnecessary to explain how expenses increase with increase of practice up to a certain point, at which point the proportion of actual running expense to actual collection commences to decrease, though not as much as one might suppose.

The above estimate does not include any allowance for attendance of medical societies, visits to the large clinics, etc., which at this day and time are almost a necessity if the doctor would keep up-to-date in his special line of work.

The young doctor who collects \$1,200.00 annually the first few years is doing well considering he is practicing medicine, and yet when we consider that he is six or eight years older than his college classmate who chose business as his means of livelihood, financially at least the young doctor is far behind. His college classmate is probably earning from \$3,000.00 to \$5,000.00 annually and has only to assume the expenses of an office when he feels that he is capable of meeting all expenses and yet have a surplus at the end of the year. If he could not reasonably count on this surplus amounting to more than a salary under some other man, in all probability he would not choose to go into business on his own hook.

Most young business men have no office expenses and can count their salaries net profit, whereas the young doctor is doing well if he can keep his head above water.

When we stop to consider what a difference there is, financially speaking, between professionals in general and the medical profession in particular and business, we do not wonder that the young men choosing medicine are becoming fewer and fewer each year. This decrease of course is largely due to the higher requirements demanded of all applicants, but there would be a diminution in the number of graduates just the same, though perhaps not so great, were the full four years in a medical school, regardless of the type of school, required followed by one or two in a hos-

pital before the State law would permit the graduate to practice medicine.

With all due respect for those exponents of higher medical education, and in our own little way we are one of them, we say do not take too much credit unto yourselves for the diminution in numbers of the medical schools and graduates but consider the above figures, the high cost of living, and last but not least, the difference financially between medical education fifteen years ago when the country boy could come to the city from October to April for two years and return a full-fledged doctor, and that of today when four years are required in the medical school and some hospital experience afterwards.

We ourselves think the high cost of living and the longer duration of the training, regardless of whether it is more scientific or not, has kept ten men from taking up the study of medicine where the mere increase of entrance requirements has prevented five.

In other words, the elevation of the medical profession is not an unmitigated benefit to the public because many men moulded in the stamp of a Gross, Agnew or some of the others we look upon as our brightest lights choose some other means of livelihood and the entire profession and all people are losers thereby.

When a man is in the schoolroom nine months in the year it is hard for him to make enough money to carry him through the next nine by working only three, no matter how desirous he may be of being a doctor, and when we consider that even after he graduates he is not assured of a livelihood we can not help but wonder that there are even as many medical students as there are.

Of necessity there has to be some change or we will have a medical aristocracy which can never be as good as the great democracy which the medical profession has always represented. Whether this change will mean rapid increase in the number of scholarships, rapid increase of fees or what not, we are unprepared to say, but we do predict a change and that at no distant time.

TO SUBSCRIBERS.

We are sending out with this, the closing number of the 107th volume of the Journals, statements to everyone who is in arrears for subscription. A great many have paid their dues and in most instances have renewed their subscription. Many do not let us hear from them at all and yet suffer the Journal to be sent to their address if we choose to send it. This, however, the United States Postal laws will not permit, as the subscription must be a paid-up subscription. We would like to have some kind of a notice from those who have been receiving the Journal as to whether the Journal should be sent or not. It is only an act of everyday courtesy to reply to letters and all we wish is the word, the more appreciated, however, if the notification for a continuance is accompanied by a remittance of the amount due. Whether these readers wish their subscriptions continued or not we beg to have a line signifying their wishes. Our Journal is entering upon the 63d years of its existence and will be thankful for your patronage and support of our confreres in the practice of medicine. Let us hear from you without delay and we will appreciate it greatly.

NATIONAL DRAINAGE CONGRESS.

Section on Malaria Eradication.

DEAR SIRS

I desire to call your attention to the Malaria Section of the National Drainage Congress. This section was organized during the Third National Drainage Congress held at St. Louis, April 10-12, 1913.

Our objects shall be to stimulate the study of the distribution, prevalence and economic importance of malaria, to conduct a campaign of publicity as far as our means will permit, and to devise ways and means to effect a permanent and efficient campaign against this grave disease.

The next meeting of the Congress will be held in Savannah, Ga.,

in 1914, the exact date to be announced later. At this meeting an extensive malaria program is contemplated.

Your membership and coöperation are earnestly desired. We want you to attend the next meeting and to contribute to the program or take part in the discussions. The membership fee in the Section is two dollars. Please have this letter read before your medical society.

Hoping to have you with us I am,

Cordially,
WM. H. DEADERICK,
Secretary.

Reviews and Book Notices

"The Institution Quarterly"—An Official Organ of the Public Charity Service of Illinois. The Publishers: The State Board of Administration; The State Charities Commission. The Staff: A. L. Bowen, Executive Secretary, State Charities Commission, Springfield, Ill.; Dr. Frank P. Norbury, Alienist, State Board of Administration, Springfield, Ill.; Dr. H. Douglas Singer, Director, State Psychopathic Institute, Kankakee, Ill. Vol. 14. No. 2.

We are in receipt of this valuable quarterly publication, issued in the interests of various commissions looking to the betterment of the wards of the state. It contains much interesting reading concerning the promulgation and progress of state charity work and in this way tends to widen out and improve the care of the unfortunate class of indigents that depend upon the state for existence. The object of the publication is thus declared. Issued by the State Board of Administration, State Charities Commission and the State Psychopathic Institute to reflect the public charity service of Illinois; to public the results of its investigations and researches in the manifold questions of care and treatment of all classes state wards and to lead the way towards a harmonious coördination of all public and private agencies throughout Illinois which at any point touch the problems of philanthropy, charity and social betterment."

"First Book of Health"—A Textbook of Personal Hygiene for Pupils in the Lower Grades. By Carl Hartman, B.A., M.A., Instructor in Zoology, University of Texas; and Lewis Bradley Bibb, B.A., M.D., Attending Physician, Austin Sanitarium, with one hundred and twenty-two illustrations. Yonkers-on-Hudson, New York. World Book Co., 1913.

We have looked over this textbook carefully and think it a most useful handbook for the instruction of young pupils in the preservation of health. It teaches in readily intelligible form the elements of everyday hygiene and in the establishment of correct habits of living. This health primer has been adopted by the pub-

lic schools of Texas and we feel sure that it will prove productive of good results in the educational system among the children of that great state.

"Transactions of the American Otological Society"—Forty-sixth Annual Meeting, Hotel Raleigh, Washington, D. C., May 6 and 7, 1913. Vol. XIII, Part 1. Published by the Society, New Bedford, Mass. 1913.

This volume of this representative society speaks well for the enthusiasm and progressive spirit of its members. A large number of exceedingly valuable papers are presented which furnishes valuable reading matter not only to the specialists but to the general practitioner as well.

"Progressive Medicine."—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor Therapeutics and Materia Medica, Jefferson Medical College. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Vol. XV, No. 3, September 1, 1913. 310 pages. Illustrated. Lea & Febiger, Philadelphia and New York. 8 vo. Paper. Subscription price, \$6.00 per annum.

We acknowledge with thanks the receipt of the September number of this valuable quarterly and take great pleasure in recommending the publication to our readers as one of the most useful periodicals of the day. It is a review of medical progress and as such places in attractive form the most recent advances in medicine and surgery. Vol. III presents the following: "Diseases of the Thorax and Its Viscera, Including the Heart, Lungs and Blood Vessels," by William Ewald, M.D., F. R. C. P.; "Dermatology and Syphilis," by Wm. S. Gottheil, M.D.; "Obstetrics," by Edward B. Davis, M.D.; Diseases of the Nervous System," by William G. Spiller, M.D.; Index. We think this volume compares favorably with any of the foregoing any one of which is worth more than the cost of a yearly subscription.

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C. S. BRIGGS, A.M., M.D.
EDITOR and PROPRIETOR

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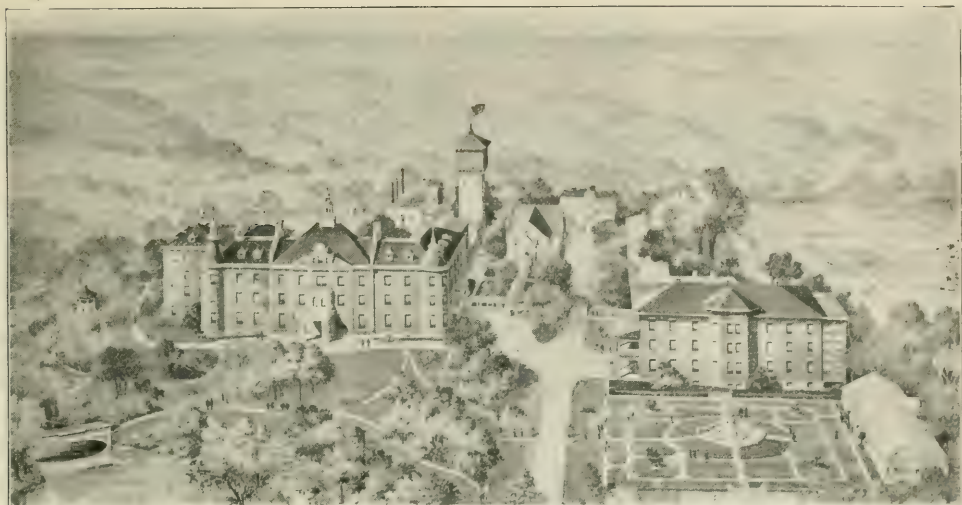
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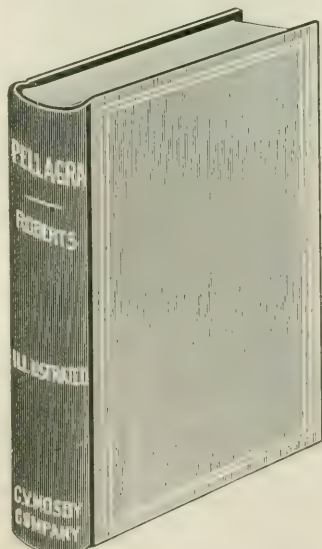
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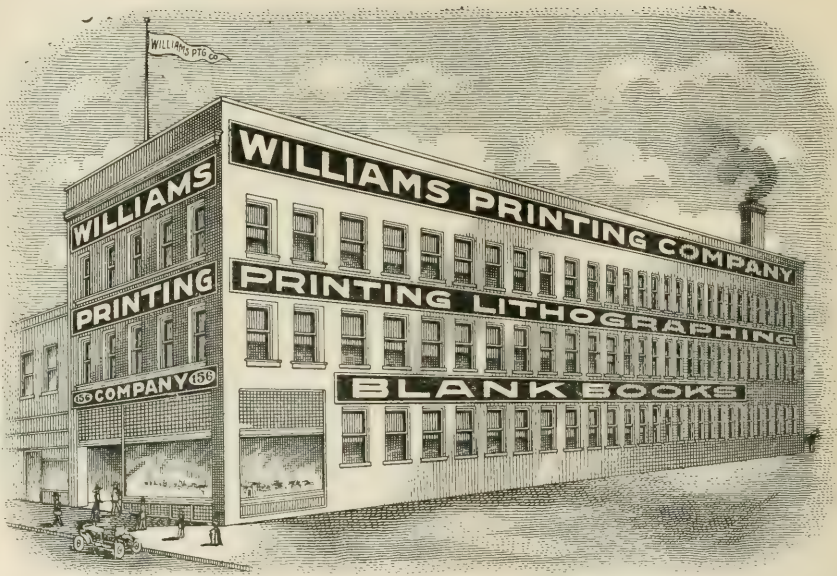
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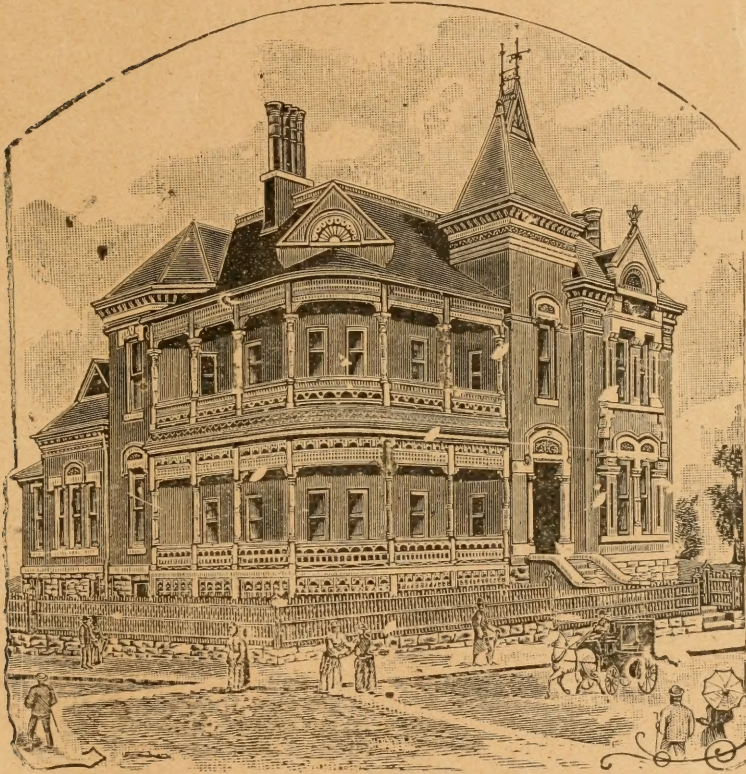


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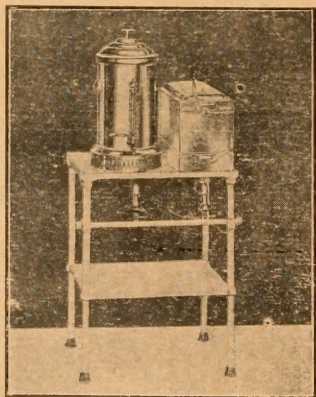
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